

REMARKS

The present response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Claims 1-47 are pending in this case. Claims 3, 24, 40 have been objected to. Claims 1-2, 4-23, 25, 27-39, 41, 43-47 have been rejected under 35 U.S.C. § 103(a). Independent claims 1, 18 and 32 and dependent claims 3, 24, 40 have been amended.

With respect to the Examiner's 35 U.S.C. § 103(a) rejections, Applicant has reviewed the cited art and respectfully submits that the art fails to disclose or suggest the Applicant's claimed invention. Therefore, Applicant respectfully traverses and requests favorable reconsideration.

Response to Claim Objections

The Examiner objected to claims 3, 24, 40 due to an informality. Applicant has amended these claims in accordance with the Examiner's suggestions. Therefore, the Examiner is respectfully to withdraw the objections to the claims.

Response to 35 U.S.C. § 103(a) Rejections

The Examiner rejected claims 1-2, 4-23, 25, 27-39, 41, 43-47 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,459,709 ("Cox et al.") in view of U.S. Patent No. 6,304,574 ("Schoo et al."). Applicant respectfully submits that the prior art fails to disclose or suggest at least an apparatus comprising a processor adapted to store received TDM data in a queue within an ingress buffer wherein all TDM data to be assembled within an Ethernet frame is stored together. Therefore, Applicant respectfully traverses the rejections and request favorable reconsideration.

While continuing to traverse the Examiner's rejections, Applicant, in order to expedite the prosecution, has chosen to clarify and emphasize the crucial distinctions between the present invention and the devices of the patents cited by the Examiner. Specifically, claim 1 has been amended to include an apparatus for transporting a plurality of Time Division Multiplexing (TDM) streams over an asynchronous Ethernet network comprising an ingress buffer for storing TDM data before encapsulation into Ethernet frames, an egress buffer for storing TDM data after received Ethernet frames are segmented, encapsulation means for retrieving TDM data from the

ingress buffer, assembling Ethernet frames therefrom, inserting therein a first timestamp related to the TDM data and forwarding the assembled Ethernet frames to an Ethernet interface, segmentation means for receiving Ethernet frames from the Ethernet interface, extracting TDM data and a second timestamp therefrom and storing the TDM data in the egress buffer and a processor comprising means for: receiving TDM data from a plurality of TDM ports, storing the received TDM data in a queue within the ingress buffer wherein all TDM data to be encapsulated within an Ethernet frame is stored together and retrieving TDM data from the egress buffer and generating a plurality of synchronous TDM data streams therefrom.

Cox et al. teaches an apparatus and method that enable T1 or E1 telecommunication frames to be transmitted between T1 or E1 telecommunications switches over a high bandwidth packet-switched network. The apparatus includes trunk interface logic and network translation logic. The trunk interface logic is coupled to a central office switch via a central office switch trunk and receives the telecommunications frames from the central office switch. The network translation logic is coupled to the trunk interface logic. The network translation logic translates the telecommunications frames into network packets that the telecommunications frame data may be transferred over the high bandwidth packet-switched network.

Schoo et al. teaches a method and apparatus for distributing protocol processing among a plurality of computing platforms. The methods function to increase the cost/performance capabilities of communication equipment that support serial communication links by distributing the protocol processing for higher-level protocols (e.g., PPP, SLIP, RTP) across multiple computing platforms, including devices such as modems.

It is submitted that the apparatus of Cox et al. is operative to package two E1 data frames into an application packet. Multiple application packets destined to the same destination switch are grouped together by the application envelope logic 510 and inserted into the payload portion of a UDP datagram. The UDP/IP/MAC prefix logic 620 appends a UDP header, IP header, MAC header and Ethernet preamble to the grouped application packets to form an Ethernet packet. The UDP header is appended to allow debugging to occur under a UNIX environment, otherwise the UDP header is not required. See column 15, lines 5-20.

In addition, the apparatus of Cox et al. provides frame queuing by deriving transmission clocks from each E1 transmit stream input into a transmit queue. The E1 channel transmit data is queued for a period of 250 microseconds (i.e. two complete frames) and then dumped to the

application envelope logic. The point-to-point connection logic provides trunk routing information corresponding to each E1 transmit stream. The trunk routing information is included in an application header that is appended to the two frames of E1 data (i.e. 64 bytes), thus forming an application packet. Multiple application packets that are destined for the same destination switch are grouped together by the application envelope logic 510 into the data portion of a UDP datagram and provided to the UDP/IP/MAC prefix logic 620 over bus 611. See column 14, line 66 to column 15, line 13.

In contrast, the TDM transport facility of the present invention is operative to package a plurality of TDM streams into a single Ethernet frame and is not necessarily limited to only two T1 or E1 frames. In addition, timestamp information related to the input TDM data stream is inserted into the Ethernet frame as well. At the other end, the timestamp information is extracted from the Ethernet frame and is analyzed in generating the TDM stream upon egress from the Ethernet network. This feature is neither taught nor suggested by the Cox et al. reference.

In further contrast, the TDM transport facility scheme of the present invention is operative to store the received TDM data in a queue within the ingress buffer wherein all TDM data to be encapsulated in a single Ethernet frame is stored together. Thus, TDM data destined to be assembled into the same Ethernet frame is stored together.

In Cox et al., the application packets destined for the same destination (not necessarily the same Ethernet frame) are grouped into the data portion of a UDP datagram and passed to the UDP/IP/MAC prefix logic. Thus, Cox et al. does not teach storing TDM data in a queue before it is assembled into an Ethernet frame, wherein the TDM data is stored in groups such that all data to be encapsulated within a single Ethernet frame is stored together. This feature is neither taught nor suggested by either Cox et al. or Schoo et al.

The combination suggested by the Examiner fails to teach or suggest all the claims limitations. The combination of Cox et al. and Schoo et al. fails to teach an apparatus comprising a processor adapted to store received TDM data in a queue within an ingress buffer wherein all TDM data to be assembled within an Ethernet frame is stored together.

Because Cox et al. and Schoo et al. do not anticipate or suggest claims 1, 18, 32 as discussed above, then claims 2-17, 19-31, 33-47 are allowable as well. The Applicant respectfully traverses the rejection of claims 1-2, 4-23, 25, 27-39, 41, 43-47 and submits that the

presently claimed invention is patently distinct over Cox et al. in view of Schoo et al. The Examiner is respectfully requested to withdraw the rejection based on 35 U.S.C. §103(a).

Conclusion

In view of the above amendments and remarks, it is respectfully submitted that independent claims 1, 18 and 32 and hence dependent claims 2-17, 19-31, 33-47 are now in condition for allowance. Prompt notice of allowance is respectfully solicited.

In light of the Amendments and the arguments set forth above, Applicant earnestly believes that they are entitled to a letters patent, and respectfully solicit the Examiner to expedite prosecution of this patent applications to issuance. Should the Examiner have any questions, the Examiner is encouraged to telephone the undersigned.

Conclusion

In view of the above amendments and remarks, it is respectfully submitted that independent claims 1, 18, 32 and hence dependent claims 2-17, 19-31, 33-47 are now in condition for allowance. Prompt notice of allowance is respectfully solicited.

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Respectfully submitted,

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